REPORT

14.

OF A

SELECT COMMITTEE OF THE SENATE

OF

PENNSYLVANIA,

RELATIVE TO THE

NAVIGATION OF THE OHIO RIVER:

WITH

TABULAR STATEMENTS ANNEXED.

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1842.

REPORT.

SENATE OF PENNSYLVANIA, *January* 31, 1842.

MR. DARSIE, from the Select Committee, to which was referred Bill No 10 on the Senate file, entitled "Resolutions relative to the navigation of the Ohio River," respectfully submit the following

REPORT:

That they have considered the subject of the improvement of the navigation of the Ohio River, which the resolutions referred to them propose to urge upon the consideration of the National Legislature, with that attention which its importance to the interests of this Commonwealth and the Union at large demand. They can expect within the limits proper for a report, very imperfectly, to present the facts and argumens which in their estimation, imperatively call upon the General Government, to make a liberal appropriation to this great object.

If we cast our eyes upon the map, we will at once perceive and acknowledge that the Ohio River, forms the main link in the chain of internal communication of the United States. It is formed at Pittsburg by the confluence of the Allegheny and Monongahela rivers. After a course of about 45 miles west and north-west in Pennsylvania, it leaves this State, and inclining to a direction south of west, passes along and on the borders of Virginia, Ohio, Kentucky and Indiana, until it reaches the Mississippi, a distance of upwards of 1,000 miles. The Allegheny river, one of the main tributaries of the Ohio, and passing through a country rich in its agricultural and mineral productions, is navigable for a portion of the year, by steamboats carrying 100 tons, but of light draught of water, as high as Olean in in Cattaraugus county and State of New York—a distance of 270 miles from its mouth. Its trade in Lumber, Iron, and Salt, is immense, and annually increasing. The Kiskiminitas is one of the tributaries of the Allegheny, and extensive salt works have been established on its borders, manufacturing many thousand barrels of salt, aided by the rich fields of bituminous coal which lie almost on the surface, and supply the manufacturer at his very door. The Monongahela River commands a wide and rich extent of country—containing within its bosom the richest and most extensive bituminous coal

fields in the world. The whole valley of the Ohio and Mississippi, as low as New Orleans, depend principally, for their supply of that useful article upon that source. It is impossible for the Committee to state with accuracy, the coal annually shipped, but is estimated to exceed 3,000,000 bushels. W. Milnor Roberts, Chief Engineer of the Monongahela Navigation Company, in his fourth annual report, says, "Some idea of the extent of the trade to be anticipated upon the completion of this improvement may be inferred from the fact, that during eight weeks of the period the present works have been in operation, there have passed through lock No. 1, on the descending trade, 354 boats and flats, loaded with coal; 38 steamboats, and 155 keel and other craft, loaded with brick, lime, glass, produce, &c., making a total of 936 vessels of all descriptions, passed." This does not include the steamboats (4 in number) which are constantly engaged in towing other craft, which, if added, would make the aggregate number of passages to exceed one thousand.

"The amount of coal carried through the lock in this brief period, does not fall short of 1,260,000 bushels, or 41,500 tons."

The Monongahela is now in the course of improvement by a company chartered by this State, by dams and slackwater, with locks of the most permanent construction, calculated for steamboats of the largest class in use in the trade between Pittsburg and Louisville. When completed, it will afford a regular steamboat navigation at all seasons of the year, when unobstructed by ice; and by its connection with the great National Road at Brownsville, and the Baltimore and Ohio Railroad at Cumberland, (a work now nearly finished,) will be the channel by which the immense trade and travel destined to be transported by that route across the mountains, must reach the Ohio River. To this work the Commonwealth has liberally contributed, and there has been expended upon it a sum exceeding $200,000. The importance of this improvement when finished, and the magnitude of the interest involved in it, leaves no room to doubt its speedy completion. And indeed, it may be remarked here, that already a vast amount of trade is thrown upon the Ohio River by this important tributary. Steamboats are daily employed upon the Monongahela River, from Brownsville to Pittsburg, during a large portion of the year, and contribute to swell the amount of tonnage shipped at Pittsburg.

Pittsburg is also the western termination of the main line of the Pennsylvania improvements, which are now finished at a cost to the Commonwealth of nearly fourteen millions of dollars; and the trade of Philadelphia with the West and Southwest is poured into Pittsburg, for transportation to its various points of ultimate destination, by the channel of the Ohio River. It is impossible to present any accurate and complete account of the trade of Pittsburg, embarrassed as it is at present by the obstructions and low water in the river—causing great delay and expense to merchants and transporters—operating as a very heavy tax upon the trade; and diverting necessarily a large portion of the business from the states and cities to other channels more circuitous and expensive, but more certain. Some idea, however, though

an inadequate one, may be formed of the extent of this internal commerce, by an inspection of two tables which are hereto attached—for which the committee are indebted to Mr. Josiah King, a merchant of Pittsburg, who prepared and forwarded them at the request of the chairman.

The first of these tables shows the amount of tonnage shipped at Pittsburg, to ports on the Ohio river, from the 15th July, to 15th November, inclusive, during the years 1840 and 1841, at the various rates per hundred pounds actually paid—the aggregate cost—the average cost per hundred pounds—the cost of the same at twenty-five cents per hundred pounds, to which it is estimated, that it would be reduced by the proposed improvement of the navigation of the river—and the excess aggregate sum paid over twenty-five cents per hundred pounds. It shows that during the four months, which are low water months, in the year 1840, the aggregate pounds shipped on the Ohio from Pittsburg, was 14,154,000, at an aggregate cost of $102,626 50, on an average cost per hundred pounds of seventy-two and a-half cents. Whereas, at the rate of twenty-five cents per hundred pounds, the cost would have been but $35,385 00; and the amount saved in these four months $67,241.

The result of Mr. King's inquiries as to the four corresponding months of 1841, exhibits the aggregate number of pounds shipped to be 12,762,000, at an aggregate cost of $118,245, and an average cost per hundred pounds of ninety-two and a-half cents, and showing a difference between that and the reduced rate, of $86,340.

To this sum of $86,340 is to be added the difference between the high water price of the conveyance of passengers, and those charged at low stages of the river, which is calculated at $46,750, making altogether in the year 1841, a charge upon the trade and business of the west, with the north and east, through Pittsburg, of $133,090. This table, it must be borne in mind, contemplates only the business of Pittsburg. Mr. King did not possess, and the committee have not within reach, materials for estimating the business of other ports on the river. They concur with him, however, in thinking that it is in all probability four times as much as that exhibited in the statement referred to. Even the whole trade of Pittsburg is not shown, but only that of the regular shippers. The transactions of retailers, and others who ship on their own account, cannot in any way be arrived at. If this is the state of the case, under the present condition of the river, what may not be expected to be its increase and developement, if the obstructions were removed and the navigation improved? Merchants prefer a transportation which is certain, though more expensive, to one, the time of which is uncertain, and in which the detention may possibly consume the profits. It is even now a matter of complaint with the merchants of Philadelphia, that they were compelled, during the past summer, to pay from twenty-five to thirty thousand dollars freight from Philadelphia to New York, on goods to their customers, who, from the low water in the Ohio, were forced to the longer and more expensive route of the Lakes. There can be no doubt, therefore, that an improvement in the navigation would produce a large

increase of business, and that the sum expended, however liberal it might be, would, in a very short time, be saved to the industry and wealth of the people, which is that of the country at large.

The second table exhibits the number of arrivals of steamboats during the several months of the year 1841—the tonnage at Custom house measurement—the keel boat departures, and their computed tonnage, together with the depth of channel on the first and fifteenth of each month. The whole number of arrivals and departures of steamboats appear to have been 1,273, and the amount of tonnage 156,587.

But the improvement of the Ohio is not an important and interesting object to Pennsylvania alone. It passes in its course along the borders of five States. There are six others and two Territories immediately interested, embracing a population of 7,829,781. The vast trade of this population is principally dependent upon the navigation of the great Western rivers, of which the Ohio is one of the most important. Not only has Pennsylvania, but Ohio, Maryland and New York have expended millions of dollars in constructing canals and railways, in reference to the trade of this river.

But that which ought to be of decisive force in the deliberations of the National Legislature upon this subject, is, that the work is of a truly national character.—It is a link in the great chain of Western waters with the Lakes, and the Seaboard, and essential to their connection.

In a period of war, the advantage which would result from the improvement of the river in the transportation of arms, munitions and men, need only be adverted to. While large sums have been voted annually to the improvements of the Eastern harbours, and in the erection of Light-houses, Break-waters, &c., the claims of the West have been in a great manner overlooked. Other Western rivers, as the Red River and Arkansas, have experienced the liberality of Congress; but the Ohio, which may be fairly considered as part of the main stem, has been almost entirely neglected.

The improvement of the Ohio has already engaged the attention of the General Government. An appropriation was made in 1831, and once or twice since, but in amounts so small as to be entirely unworthy the object.

Of its practibility there can be no doubt. Experiments and surveys have already been made under the authority of Congress, which have settled the question. A report was made to the Engineer Department, at Washington, by Mr. Henry M. Shreve, Superintendent, in 1832, on the improvement of the Ohio and Mississippi rivers, in which he says, "Two wing dams have been completed at French Island, measuring together over one and a-half miles in length; two on Scuffletown bars, upwards of three-quarters of a mile long; three at the Three Sisters' Islands, in length one and one-eighth miles; and one at the Three mile Island bar, about a half a mile in length.—At those four bars, the greatest difficulty in the low water navigation was formerly met with: frequently there was not more than 18 to 24 inches of water to be found over the bars. Since the wing dams have

been completed, there has not been less than four feet of water in the channels over them, although the water has been within a few inches of its lowest stage." * * * * * "There will probably be three more dams finished this fall, which will so far improve the river, that boats may navigate it from the Falls to the mouth, with three feet draft of water at its lowest stage—at least one-third more water than could be carried through that part of the river, previous to the wing-dams being commenced. This work, which was formerly viewed as an experiment, is now reduced to a practical certainty. *The bars throughout the whole extent of the Ohio river can be removed in such a manner as to produce a safe and uniform navigation at its lowest stage of water, with steamboats drawing four feet of water.* Those five bars that have been operated on, were by far the most difficult and shoalest in the Ohio, from the mouth of the Scioto to the Mississippi river. By that system of improvement, the channels over the bars are permanent: no shifting can possibly take place by the drifting of the sand, but the channel must remain in the same track from year to year; consequently, the navigation of the river will be much better understood than it now is. In the natural situation of the sand bars in the Ohio, they are liable to have channels washed through them in different places, at the various stages of the river. When the water falls, and becomes scarce, the pilots are very much at a loss to find the best pass over the bars. This difficulty is entirely removed by the wing dams, as the channel will forever remain in the same line, without a possibility of a change, with at least double the depth at extreme low water mark, that is to be found on the shoalest bars in their original forms."

In the report of Capt. Richard Delafield, of the Engineer corps, in the same year, he says, "The last class of works has now been so far tested as to render no longer doubtful the success of removing the bars from their present positions; and to this period entirely accomplishing the object in view, of giving a permanent and unchangeable $3\frac{1}{2}$ and 4 feet channel-way.

"With a judicious location of the dams, I am more fully confirmed in the belief that permanency may be secured to all such works; and that removing the dam from one point, shall not form another immediately below. This is the only doubt as to the entire success of the works of this class.

"The results thus far has been satisfactory. Last year two of the most difficult and shoalest bars were damed, as shown by figures 1 and 2, accompanying this report.

"On the Scuffletown bar, fig. 2, there was formerly but 18 to 20 inches water at the low stage of the river. Since the dams have been constructed, there is four feet, and no injurious formation below it. All sands having apparently been deposited under the lee and eddy made by the dam, and the channel confined within permanent banks."

There is also a very able report on the same subject, made in 1835, by Lieut. Dutton, the length of which prevents the committee from transcribing it at large—and it would be injustice to it to make any

mere extracts. It describes the general character of the obstructions in the river, and shows most conclusively the entire practicability of the project of the improvement.

There is no work in the Union, involving so large an interest, which can be executed at so small an outlay. It is believed that the whole extent of river from Pittsburg to Louisville can be made navigable for steamboats drawing from thirty to thirty-six inches, at the driest season of the year, for a less expenditure than would be necessary to construct a canal from Pittsburg to Beaver.

Your committee believe, that this subject need only be presented to the consideration of the Congress of the United States, to secure the object asked. The grounds upon which it is placed are of so general and national a character, that they must at once properly estimate its importance to the whole country. The hearty and zealous co-operation of the Senators and Representntives from Pennsylvania, together with those of other States more directly interested, ought to be earnestly invoked; and the committee, therefore, report to the Senate the resolutions referred to them as committed.

[Table No. 2.]

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Keel Boat Departures,	Tonnage computed,	Depth of Channel, at 1st and 15th of month.				Flat—Depart,	Tonnage,
		1st.		15th.			
		Feet.	Inches.	Feet,	Inches,		
12	260	Ice.		11.0			
11	213	9.6		Ice.			
27	623	4.6		6 0			

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[Attached to Report of Committee on the subject of Improving the Ohio River.]

Table showing the amount of tonnage shipped at Pittsburg to ports on the Ohio river, the years 1840--'41, at the various rates per 100 lbs. actually paid; the aggregate cost, at 25 cents per 100 lbs., and the excess aggregate sum paid over 25 cents per 100 lbs. C

	Quantity of freight shipped at Pittsburg, at the following rates per 100 lbs., from the 15th of July, to the 15th of November, 1840 and 1841.										Ag sh wa 18
	$1 75	$1 50	$1 25	$1 00	87½ cts.	75 cts.	62½ cts.	50 cts.	40 cts.	25 cts.	
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	
1840,	240,000	228,000	912,000	2,040,000	144,000	3,876,000	2,946,000	1,290,000	1,146,000	1,332,000	
1841,	150,000	1,104,000	1,920,000	3,792,000	696,000	1,944,000	1,260,000	1,506,000	60,000	330,000	
1840–'41.	390,000	1,332,000	2,832,000	5,832,000	840,000	5,820,000	4,206,000	2,796,000	1,206,000	1,662,000	

There were from 15th July to 15th November, 1841, departures of Steamboats from Pittsburg, for ports on the
Estimated number cabin passengers, at $5 each above average high water rates, 5,750, - -
" steerage " $2 " " " 8,000, - -
There were, in same time, departures of Keels and Barges, 187, with 2,000 passengers, at $1 extra, -
Add to this the extra amount on freights, as above, in 1841, - - - - -

And we have an excess on the business of the port of Pittsburg alone, in one yea

You will observe that the above table contemplates only the business of Pittsburg. I have no data for estimating the it is in all probability, altogether, four times as much as what is here exhibited. It should be borne in mind also, that a vast amount of business would be done that is forced into other more lengthy and hazardous routes. It is now a ma compelled, during the past summer, to pay 25 to $30,000 freight from Philadelphia to New York, on goods sold to the the longer and more expensive route of the Lakes.

Another important consideration in favor of improving the Ohio river is, that not only Pennsylvania, but Maryland canals and railways with reference to the trade of this river, and almost every State in the Union has a deep interest i course. There are about 400 steamboats on the western rivers, and at least 100 of those belong properly to the Ohio r at Pittsburg.

[Table No. 2.]

1841.	Steamboat Arrivals,	Tonnage at Custom-House Measurement,	Keel Boat Departures,	Tonnage computed,	Depth of Channel, at 1st and 15th of month. 1st. Feet.	1st. Inches.	15th. Feet,	15th. Inches,	Flat—Depart,	Tonnage,
January,	23	3,440	12	260	Ice.		11.0			
February,	28	2,982	11	213	9.6		Ice.			
March,	93	12,235	27	623	4.6		6.0			
April,	94	12,908	48	1,013	15.0		9.4			
May,	86	12,463	49	1,090	12.3		10.0			
June,	66	7,514	50	1,100	4.6		2.5			
July,	34	3,732	49	1,485	4.4		1.11			
August,	8	319	57	2,115	1.9		0.11			
September,	13	1,028	60	2,460	1.3		1.0			
October,	47	3,521	44	1,510	2.10		2.6			
November,	69	8,539	43	1,100	2.10		4.0			
December,	59	8,047	24	530	5.2		11.0			
Total,	620	76,728	474	13,499					1,218	9,206
	653	79,850	..... Departures S. Boats.							
Total,	1,273	156,578	..... Arrivals and Departures.							

☞The above table is compiled from the records of the City Wharf Master.

☞ *Note by J. King.*—The steamboats arriving up the river from *July* to *October* may be said, generally, to carry no cargo. They take very little down, but run chiefly with reference to passengers, and for what freight they do take at stages of water below three feet high, rates say 75 to 150 per c. 100 wt. to Louisville, is charged.—Boats of draft and bearings adapted to a 30 inch stage of water are multiplying; and if the river could be so improved as never to have less than 30 inches in channel, individual enterprise would immediately furnish boats in numbers adequate to carry any amount of freight that might offer, (it is confidently believed,) at 25 c. per 100 wt. and thereby if prices of freight be reduced to a proper standard on the Pennsylvania canals, render the Ohio river and Pennsylvania route, the *cheapest*, as it is the shortest and safest between most of the Western States and the sea-board. The foregoing table is interesting, not as exhibiting a *large* business done, but as showing that a considerable business found its way via Pittsburg, to the Ohio river, despite exhorbitant rates both on the canals and river, amounting to $3 per 100 wt., from Philadelphia or Baltimore to Louisville; and thus demonstrating, that if the expense of the same service can be permanently reduced to $1 or $1½, the route in question would be the favorite route, and all the while filled with goods and produce in transitu between the eastern and western cities. It is the opinion of experienced navigators of the Ohio river, that wooden steamboats can and will be constructed to carry 80 or 100 tons of cargo, on 30 inches of water, and that iron boats can be made to carry 100 to 150, on the same water.